Dear Mr. Reede

Enclosed for filing in the docket for El Segundo Power Redevelopment (ESPR), 00-AFC-14, are 18 copies and 1 original of El Segundo Power II LLC (ESP II) s data request responses dated April 30, 2001. These responses contain both supplemental responses to data requests based on party requests as well as original responses to data requests.

This data request response package is designed for insertion into what is now a two-volume set of data request responses. The data request responses contain the following materials described below. **The bold text** provides instructions for inserting into the data responses set.

1. Stickers labeled Volume I and Volume II. **Please place these on the spines of the data request response binders to assist in identifying the two binders.**

2. Updated Table of Contents and User s Guide to Data Requests and Responses **Please replace pages i through iii with new pages i through iv.**

3. Updated DATA RESPONSE GUIDE containing a comprehensive matrix of all data request responses filed to date. **Please replace the existing DATA RESPONSE GUIDE (6 pages) with the new DATA RESPONSE GUIDE (7 pages).**

4. Updated Data Response Summary page for Biological Resources. **Please replace pages BIO-1 and BIO-2 with new pages BIO-1 and BIO-2.**

5. New page BIO-37 for insertion at the end of the Biological Resources section. **Please place page BIO-37 at end of Bio section following page BIO-36**

6. Updated Data Response Summary page for Hazardous Material Handling. **Please replace page HMH-1 with new page HMH-1.**

7. New pages HM -9 through HM-15 for insertion at the end of Hazardous Materials Handling section. **Please place new pages HMH-9 through HMH-15 at end of Hazardous Material Handling Section, following page HMH-8.**

8. Updated Data Response Summary pages for Soil and Water Resources. **Please replace pages SOIL-1 through SOIL-2 with new pages Soil-1 through Soil-3**.

9. New pages SOIL-17 through SOIL-41 for insertion at the end of the Soil and Water Resources section. **Please place new pages SOIL-17 through SOIL-41 at end of Soil and Water Resources Section, following page SOIL-16.**

10. Attachment 21, Ammonia spill scenario figures, for insertion in the attachments section. **Please insert Attachment 21, with its numbered tab in Volume II, following Attachment 20.**

If you have any questions regarding these instructions or these responses, please do not hesitate to call me.

VTY JAM

DATA RESPONSE GUIDE
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
Air Quality			
1	March 28	CEC	AQ-2
2	March 28	CEC	AQ-4
3	March 28	CEC	AQ-4
4	March 28	CEC	AQ-5
5	March 28	CEC	AQ-5
29	March 28	CEC	AQ-6
48	March 28	COES	AQ-6
49	March 28	COES	AQ-7
50	March 28	COES	AQ-7
51	March 28	COES	AQ-8
CCC-10	April 13	CCC	AQ-8
6ss	April 30	CCC	BIO-37
Biological Resources			
6	March 28	CEC	BIO-3
7	March 28	CEC	BIO-5
8	March 28	CEC	BIO-7
9	March 28	CEC	BIO-8
10	March 28	CEC	BIO-10
45	March 28	COES	BIO-13
52	March 28	COES	BIO-13
53	March 28	COES	BIO-13
54	March 28	COES	BIO-15
55	March 28	COES	BIO-16
78	March 28	CCC	BIO-17
79	March 28	CCC	BIO-19
80	March 28	CCC	BIO-20
81	March 28	CCC	BIO-20
82	March 28	CCC	BIO-24
83	March 28	CCC	BIO-24
84	March 28	CCC	BIO-27
85	March 28	CCC	BIO-27
CCC-1	April 18	CCC	BIO-27
CCC-17	April 18	CCC	BIO-28
CCC-25	April 18	CCC	BIO-29
6s	April 18	CEC	BIO-31

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
7s	April 18	CEC	BIO-31
8s	April 18	CEC	BIO-32
9s	April 18	CEC	BIO-33
81s	April 18	CCC	BIO-33
84s	April 18	CCC	BIO-34
USFWS-1	April 18	USFWS	BIO-34
USFWS-2	April 18	USFWS	BIO-35
USFWS-3	April 18	USFWS	BIO-36
6ss	April 30	CCC	BIO-37
Cultural Resources			
11	March 28	CEC	CUL-2
12	March 28	CEC	CUL-2
13	March 28	CEC	CUL-6
14	March 28	CEC	CUL-6
15	March 28	CEC	CUL-7
16	March 28	CEC	CUL-10
17	March 28	CEC	CUL-11
18	March 28	CEC	CUL-11
90	April 18	CEC	CUL-12
91	April 18	CEC	CUL-12
CCC-18	April 18	CCC	CUL-12
15s	April 18	CEC	CUL-13
Cumulative Impacts			
77	March 28	COES	CUM-2
77s	April 18	COES	CUM-5
Efficiency			
19	March 28	CEC	EFF-2
Geology and Paleontology			
20	March 28	CEC	GEO-2
21	March 28	CEC	GEO-3
22	March 28	CEC	GEO-3
23	March 28	CEC	GEO-4
24	March 28	CEC	GEO-6
25	March 28	CEC	GEO-7
CCC-11 (CCC-6)	April 18	CCC	GEO-7
CCC-12 (CCC-7)	April 18	CCC	GEO-8

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
CCC-13	April 18	CCC	GEO-9
CCC-14	April 18	CCC	GEO-9
CCC-15	April 18	CCC	GEO-9
Hazardous Material Handling			
70	March 28	COES	HMH-2
71	March 28	COES	HMH-2
72	March 28	COES	HMH-3
73	March 28	COES	HMH-4
92	April 18	CEC	HMH-5
93	April 18, April 30	CEC	HMH-7, HMH-9
94	April 18, April 30	CEC	HMH-7, HMH-13
95	April 18	CEC	HMH-7
Land Use			
26	March 28	CEC	LU-2
27	March 28	CEC	LU-2
40	March 28	CEC	LU-2
41	March 28	CEC	LU-3
61	March 28	CEC	LU-3
65	March 28	CEC	LU-3
66	March 28	CEC	LU-3
67	March 28	CEC	LU-3
CCC-4	April 18	CCC	LU-4
CCC-19	April 18	CCC	LU-4
40s	April 18	CEC	LU-4
66s	April 18	CEC	LU-4
67s	April 18	CEC	LU-5
Noise			
28	March 28	CEC	NOI-2
133	April 13, April 18	CEC	NOI-2
134	April 13, April 18	CEC	NOI-4
CCC-21	April 18	CCC	NOI-5
28s	April 18	CEC	NOI-5
Project Description			
35	March 28	COES	PD-3
36	March 28	COES	PD-3
37	March 28	COES	PD-3

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
38	March 28	COES	PD-3
39	March 28	COES	PD-3
42	March 28	COES	PD-4
43	March 28	COES	PD-4
44	March 28	COES	PD-4
46	March 28	COES	PD-4
47	March 28	COES	PD-4
58	March 28	COES	PD-5
59	March 28	COES	PD-5
60	March 28	COES	PD-5
88	March 28	COES	PD-5
CCC-5	April 18	CCC	PD-6
CCC-6	April 18	CCC	PD-6
CCC-7	April 18	CCC	PD-7
COES-1	April 18	COES	PD-7
COES-2	April 18	COES	PD-8
38s	April 18	COES	PD-8
46s	April 18	COES	PD-9
88s	April 18	COES	PD-9
Socioeconomics			
68	March 28	COES	SOC-2
69	March 28	COES	SOC-2
96	April 18	CEC	SOC-3
97	April 18	CEC	SOC-3
Soil and Water			
112	April 18	CEC	SOIL-3
113	April 18, April 30	CEC	SOIL-4, SOIL-17
114	April 18, April 30	CEC	SOIL-4, SOIL-19
115	April 18, April 30	CEC	SOIL-4, SOIL-19
116	April 18, April 30	CEC	SOIL-5, SOIL-20
117	April 18	CEC	SOIL-5
118	April 18, April 30	CEC	SOIL-6, SOIL-21
119	April 18	CEC	SOIL-6
120	April 18, April 30	CEC	SOIL-9, SOIL-24
121	April 18, April 30	CEC	SOIL-9, SOIL-24
122	April 18, April 30	CEC	SOIL-9, SOIL-24

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
123	April 18, April 30	CEC	SOIL-10, SOIL-25
124	April 18, April 30	CEC	SOIL-10, SOIL-26
125	April 18	CEC	SOIL-11
126	April 18	CEC	SOIL-11
127	April 18	CEC	SOIL-12
128	April 18	CEC	SOIL-12
129	April 18	CEC	SOIL-12
130	April 18	CEC	SOIL-13
131	April 18	CEC	SOIL-14
CCC-2	April 18	CCC	SOIL-15
CCC-3	April 18	CCC	SOIL-15
CCC-8	April 18	CCC	SOIL-15
CCC-9	April 18	CCC	SOIL-16
CCC-16	April 18	CCC	SOIL-16
CCC-24	April 18	CCC	SOIL-16
135	April 30	CEC	SOIL-26
136	April 30	CEC	SOIL-27
137	April 30	CEC	SOIL-27
138	April 30	CEC	SOIL-28
139	April 30	CEC	SOIL-29
140	April 30	CEC	SOIL-29
141	April 30	CEC	SOIL-29
142	April 30	CEC	SOIL-31
143	April 30	CEC	SOIL-31
144	April 30	CEC	SOIL-32
145	April 30	CEC	SOIL-32
146	April 30	CEC	SOIL-33
147	April 30	CEC	SOIL-34
148	April 30	CEC	SOIL-35
149	April 30	CEC	SOIL-35
150	April 30	CEC	SOIL-36
151	April 30	CEC	SOIL-36
152	April 30	CEC	SOIL-37
153	April 30	CEC	SOIL-38
154	April 30	CEC	SOIL-39
155	April 30	CEC	SOIL-40

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
Traffic and Transportation			
30	March 28	CEC	T&T-2
31	March 28	CEC	T&T-2
32	March 28	CEC	T&T-3
33	March 28	CEC	T&T-3
34	March 28	CEC	T&T-4
62	March 28	CEC	T&T-4
63	March 28	CEC	T&T-5
64	March 28	CEC	T&T-5
87	March 28	COMB	T&T-5
CCC-20	April 18	CCC	T&T-6
33s	April 18	CEC	T&T-7
62s	April 18	CEC	T&T-11
Transmission Line Safety and Nuisance			
74	March 28	COES	TLSN-2
75	March 28	COES	TLSN-2
76	March 28	COES	TLSN-3
Transmission System Engineering			
98	April 18	CEC	TSE-2
74s	April 18	CEC	TSE-2
75s	April 18	CEC	TSE-2
Visual Resources			
56	March 28	COES/COMB	VIS-2
57	March 28	COES/COMB	VIS-3
86	March 28	COMB	VIS-3
89	March 28	COMB	VIS-3
99	April 13	CEC	VIS-4
100	April 13	CEC	VIS-5
101	April 13	CEC	VIS-5
102	April 13	CEC	VIS-5
103	April 13	CEC	VIS-6
104	April 13	CEC	VIS-6
105	April 13	CEC	VIS-7
106	April 13	CEC	VIS-7
107	April 13	CEC	VIS-8
108	April 13	CEC	VIS-9

Data Response Guide (Cont.)
(Updated April 30, 2001)

Data Request	Applicant s Response Date	Source of Data Request	Page
109	April 13	CEC	VIS-9
110	April 13	CEC	VIS-10
111	April 13	CEC	VIS-18
CCC-22	April 13	CCC	VIS-18
Waste Management			
CCC-23	April 18	CCC	WM-2
Worker Safety			
132	April 18	CEC	WS-2

RESPONSE TO DATA REQUESTS

TABLE OF CONTENTS (UPDATED APRIL 30, 2001)

LIST OF ATTACHMENTS (UPDATED APRIL 30, 2001)

LIST OF ATTACHMENTS (UPDATED APRIL 30, 2001)

LIST OF TABLES (UPDATED APRIL 30, 2001)

TECHNICAL AREA : BIOLOGICAL RESOURCES

SUMMARY OF BIOLOGICAL DATA REQUESTS AND RESPONSES

Since filing the Application for Certification, several biology issues have been raised. ESP II has filed numerous data request responses regarding these issues. Issues raised include:

1) Intake and outfall structure design and whether system is Best Technology Available (BTA)
2) Adequacy of the analysis for impingement related impacts of ESPR to biological resources
3) Accuracy of the thermal modeling and associated impact analysis
4) Ability to reduce impingement during heat treatment evolutions
5) Whether ESPR can be operated under the existing NPDES permit and the legal implications of being an existing intake and an existing discharge
6) Adjacency of the water supply pipelines to the El Segundo Blue Butterfly Preserve on the Chevron Refinery property, and other terrestrial biological resources in the vicinity of off-site staging and worker parking locations.

Because several of these issues overlap with the Water Resources subject matter area, many Water Resource data requests duplicate Biology data requests. In responding to data requests, most issue areas have been thoroughly explored. The data responses below, which include those filed on April 30, 2001, should provide sufficient information to ensure that ESPR complies with all applicable Laws, Ordinances, Regulations, and Standards, and has no significant impacts.

The following Data Requests have been received regarding Biological Resources:

Data Request	Applicant s Response Date	Source of Data Request	Page
6	March 28	CEC	BIO-3
7	March 28	CEC	BIO-5
8	March 28	CEC	BIO-7
9	March 28	CEC	BIO-8
10	March 28	CEC	BIO-10
45	March 28	COES	BIO-13
52	March 28	COES	BIO-13
53	March 28	COES	BIO-13
54	March 28	COES	BIO-15
55	March 28	COES	BIO-16
78	March 28	CCC	BIO-17
79	March 28	CCC	BIO-19
80	March 28	CCC	BIO-20
81	March 28	CCC	BIO-20
82	March 28	CCC	BIO-24
83	March 28	CCC	BIO-24
84	March 28	CCC	BIO-27
85	March 28	CCC	BIO-27
CCC-1	April 18	CCC	BIO-27
CCC-17	April 18	CCC	BIO-28
CCC-25	April 18	CCC	BIO-29
6s	April 18	CEC	BIO-31
7s	April 18	CEC	BIO-31
8s	April 18	CEC	BIO-32
9s	April 18	CEC	BIO-33
81s	April 18	CCC	BIO-33
84s	April 18	CCC	BIO-34
USFWS-1	April 18	USFWS	BIO-34
USFWS-2	April 18	USFWS	BIO-35
USFWS-3	April 18	USFWS	BIO-36
6ss	April 27	CEC	BIO-37

TECHNICAL AREA: BIOLOGICAL RESOURCES
AUTHOR: NOEL DAVIS

Second Supplement to No. 6. As discussed at the March 28 workshop, the Applicant has agreed to provide the results of an ichthyoplankton study that uses data collected at King Harbor.

Second Supplemental Response No. 6: A confirmation analysis is underway to verify the accuracy and completeness of the analysis of potential impacts of entrainment on the populations of aquatic species of concern, as presented in the AFC, Section 5.6. Source data and preliminary findings were provided verbally to CEC s biological consultants on April 26, 2001. The completed analysis and final study results will be provided on or before June 1, 2001. As indicated in the previous supplemental response to Data Request 6, source data is provided by the Van Tuna Research Group; a protocol methodology for the analysis is discussed and confirmed during a conference call between the Applicant s biological consultants and the CEC s biological staff and consultants on April 11.

TECHNICAL AREA : HAZARDOUS MATERIAL HANDLING

SUMMARY OF HAZARDOUS MATERIALS DATA REQUESTS AND RESPONSES

Since filing the Application for Certification, several data requests have been issued on various hazardous materials topics. Two of these data requests call for Offsite Consequences Analyses (OCA) which have been conducted, and are included herein. The other data requests have been fully answered and are presented below. ESP II continues to believe that ESPR complies with all applicable Laws, Ordinances, Regulations, and Standards, and has no unmitigated significant hazardous materials impacts.

The following Data Requests have been received regarding Hazardous Material Handling:

Data Request	Applicant s Response Date	Source of Data Request	Page
70	March 28	COES	HMH-2
71	March 28	COES	HMH-2
72	March 28	COES	HMH-3
73	March 28	COES	HMH-4
92	April 18	CEC	HMH-5
93	April 18, April 30	CEC	HMH-7, HMH-9
94	April 18, April 30	CEC	HMH-7, HMH-13
95	April 18	CEC	HMH-7

TECHNICAL AREA : HAZARDOUS MATERIALS HANDLING
AUTHOR:

BACKGROUND

Section 5.15.2.3.3 details the modeling and associated results associated with two ammonia release scenarios based on a 200-ppm ammonia endpoint. Staff routinely uses a 75-ppm endpoint with a 30-minute exposure for evaluation of significant public health impacts associated with potential ammonia releases. The 200-ppm criterion is more a planning and emergency response guideline unlike the 75-ppm criterion, which is a public exposure criterion.

DATA REQUEST

93. Please revise the OCA to include the 75-ppm —30-minute criterion and document the corresponding results. Also, estimate and document probability estimates (yearly and plant life) for both release scenarios.

Response No. 93: The OCA has been revised to include the 75-ppm 30-minute criterion. The analysis and results are summarized below.

Scenario Selection

As requested, an additional OCA was performed for the SCR under two potential accidental release scenarios identified as worst case . The first scenario involves the option where the aqueous ammonia is delivered to the facility via pipeline from the neighboring Chevron El Segundo Refinery and the entire pipeline contents from the underground storage tank and the property boundary is assumed to be released. A second scenario assumes that the aqueous ammonia is delivered by tanker truck. In this scenario, it is assumed that the contents from a full 6,000-gallon tanker truck is assumed to be released within a 10-minute period. These hypothetical release scenarios are further described below. Zones of vulnerability were then assessed using U.S. EPA-approved dispersion techniques which predict the airborne migration and concentration of the ammonia. Potential short-term health effects were evaluated from the estimated zones of vulnerability.

The OCA described in detail below includes the following components. The first is an estimation of emission rates associated with the hypothetical release. Atmospheric dispersion modeling techniques were utilized to predict the extent of potential vulnerability zones associated with the hypothetical, worst-case release. Finally, the potential degree and extent of offsite consequences were based on the dispersion modeling results.

The emission estimates for each of the scenarios are based upon the procedures set forth in the U.S. EPA Guidance document for unmitigated releases for toxic liquids (Section 3.2.2). In this procedure, the total release is defined to be released within the first 10 minutes. Within this period, the release rate is assumed to be uniform and is defined as follows:

$$QR = QS \times 1.4 \times LFA \times DF$$

where:
- QR = Release rate (pounds per minute)
- QS = Quantity released (pounds)
- 1.4 = Wind speed factor = $1.5^{0.78}$, where 1.5 meters per second is the wind speed for the worst case.
- LFA = Liquid Factor Ambient
- DF = Density Factor

Based upon the characteristics of ammonia the LFA is defined as 0.026 and the DF is defined as 0.55 (Exhibit B-3 of the guidance document). For the worst-case analysis, it is assumed that the release would occur during very stable condition (Stability Class F) and light wind speeds (1.5 m/s), with a temperature of 100°F. Further, it is assumed that the wind direction could occur in any direction.

Based upon the request, the significant exposure threshold is defined as the downwind distance where the predicted concentration exceeds the ERPG-1 level of 75 ppm. The maximum downwind concentration is predicted (for each scenario) in the guidance document as a function of the release rate and the ERPG-1 level. The significant downwind distances have been provided in the guidance document specifically for aqueous ammonia and are a function of the estimated release rate (Reference Table 10). Estimation of the significant exposure distances was generated from this table for each scenario.

Pipeline Release Scenario

Potential accidental release scenario for the pipeline transportation of the aqueous ammonia involves the rupture of the pipeline and allowing all of the contents to be spilled onto the ground. Due to the checks and balances between the Chevron El Segundo Refinery and NRG, it is assumed that sufficient check valves and safety measures will be in place that will not allow ammonia to leak between the two facilities pipelines. Therefore, the extent of the accidental release for a pipeline rupture is assumed to be limited to the segment of pipeline located between the ESGS and Chevron property line and the ESGS existing underground storage tank. The estimated distance from the tank to the property line was 2,145 feet. The diameter of the ammonia line is assumed to be 3 inches, giving a total volume of 105 cubic feet (787.6 gallons of aqueous solution). This results in approximately 6,576 pounds of aqueous ammonia at 30 percent ammonia or equivalent to 1,973 pounds of ammonia within the solution.

Based upon the equation in Section 3.2, the release rate from this spillage would be estimated at 39.5 pounds per minute. For the purposes of this analysis, this release was evaluated at the most southern point of the pipeline (the nearest point to the residents to the south) and the most northwesterly tip of the pipeline (to evaluate the nearest beach locations).

Pipeline Scenario Results

The results of the analysis for the pipeline scenario indicate that an area of 0.2 miles would be predicted to exceed the 75ppm threshold level, using the OCA guidance document procedures. This distance would not affect any residences in the surrounding area, even at the most southerly location of the pipeline. Figure 93-1 illustrates the radius of influence for the worst-case wind speed/stability class combination. However, it should be noted that under this worst-case condition, the zone of influence does encompass a small area of the public beach to the northwest corner of the property. In addition, a small section of Vista Del Mar Road would be within the zone of influence.

It is important to note that this off-site consequence analysis is ultra conservative, as required by the EPA RMP Guidance. For example, the worst-case meteorology used in the analysis of an ambient temperature of 100°F, F stability, and 1-m/s winds would not realistically occur simultaneously. Under actual typical conditions, stable atmospheres and low winds are associated with night and early morning conditions, when ambient temperatures are not expected to be this high. At a daytime temperature of 100°F, atmospheric stability with low winds would more likely occur under C or D stability due to thermal atmospheric mixing caused by daytime solar insolation. Conversely, F stability and 1-m/s winds are more likely to occur at overnight or early morning temperatures. Furthermore, the worst-case analysis also gives no credit for active control measures included in the ammonia storage/receiving facility design.

Tanker Truck Release Scenario

Potential accidental release scenario for the tanker truck transportation of the aqueous ammonia involves the rupture of the tanker truck while unloading the aqueous ammonia. The release assumed that the truck was full, the accident occurred at the beginning of the unloading process, and the entire contents of the truck spilled onto an undiked area. The total volume of 6,000 gallons would result in approximately 44,880 pounds of aqueous ammonia, of which approximately 13,465 pounds would be ammonia, assuming a 30 percent solution.
The release rate was again based upon the equation in Section 3.2 and the spillage release rate would be estimated at 269.5 pounds per minute. For the purposes of this analysis, this release was evaluated at the unloading area near the underground storage location.

Tanker Truck Scenario Results

The results of the analysis for the tanker truck scenario extend a significantly larger area than the pipeline scenario. The maximum zone of influence above the significance level extends outwards to a distance of 0.5 miles (approximately 2,640 feet from the release location). This encompasses the several residential locations to the south of the property, Vista Del Mar Road, and the public beach areas near the hypothetical release as seen in Figure 93-2.

Again, it should be noted that this off-site consequence analysis is very conservative and may over-predict actual release conditions.

BACKGROUND

Table 5.15.2 suggests that hydrazine is to be stored and used on site. Hydrazine is a poison, flammable and corrosive and can pose a potential for significant public health impacts though it s stored at levels below CALARP thresholds.

DATA REQUEST

94. Conduct an OCA for two releases scenarios- one involving a storage tank rupture and the other a release during product unloading. Use similar climatic conditions as that for ammonia but use either the SCREEN3 or ISCST3 model

Response No. 94: Initially, it is not clear that hydrazine will be used for the new units, but rather an oxygenated compound, in which hydrazine is one potential compound. In addition, the AFC incorrectly reported that 500 gallons per day would be used. In fact, the usage is expected to be less than 1 gallon per day. If hydrazine is used at the site, a single tote would be onsite at any one time totaling 400 gallons of 35 percent aqueous hydrazine. At this concentration, the hydrazine would not be flammable.

As requested, an additional OCA was performed on a potential accidental release scenario identified as worst case . This scenario involves the option where the entire contents of the aqueous-hydrazine tote are assumed to be released. A second scenario was recommended in the comment that would assume a release of a tanker truck delivering the hydrazine.

However, the hydrazine is not brought in by tanker truck, but rather by the tote and, therefore, a second scenario would be redundant. Zones of vulnerability were then assessed using U.S. EPA-approved dispersion techniques which predict the airborne migration and concentration of the hydrazine. Potential short-term health effects were evaluated from the estimated zones of vulnerability.

The OCA described in detail below includes the following components. The first is an estimation of emission rates associated with the hypothetical release. Atmospheric dispersion modeling techniques were utilized to predict the extent of potential vulnerability zones associated with the hypothetical, worst-case release. Finally, the potential degree and extent of offsite consequences were based on the dispersion modeling results.

The emission estimates for each of the scenarios are based upon the procedures set forth in the U.S. EPA Guidance document for unmitigated releases for toxic liquids (Section 3.2.2). In this procedure, the total release is defined to be release within the first 10 minutes. Within this period, the release rate is assumed to be uniform and is defined as follows:

$$QR = 0.0035 \times U^{0.78} \times MW^{0.67} \times A \times VP/T$$

where:

QR = Release rate (pounds per minute)

$U^{0.78}$ = Wind speed factor = $1.5^{0.78}$, where 1.5 meters per second is the wind speed for the worst case.

MW = Molecular Weight (32.1)

A = Area ($54.1 ft^3$)

VP = Partial Vapor Pressure (3.5 mmHg)

T = Temperature (310^oK)

Based upon the characteristics of aqueous hydrazine, under the worst-case analysis, it is assumed that the release would occur during very stable condition (Stability Class F) and light wind speeds (1.5 m/s), with a temperature of 100^oF. Further, it is assumed that the wind direction could occur in any direction.

Based upon the request, the significant exposure threshold is defined as the downwind distance where the predicted concentration exceeds the ERPG-2 level of 8 ppm. The maximum downwind concentration is predicted in the guidance document as a function of the release rate and the ERPG-2 level. The significant downwind distances have been provided in the guidance document specifically for aqueous ammonia and are a function of the estimated release rate (Reference Table 4).

Estimation of the significant exposure distances was generated from this table.

Tote Release Scenario

Potential accidental release scenario for the tote release of the aqueous hydrazine involves the rupture of the tote and allowing all of the contents to be spilled onto the ground into a bermed area of 54.1 ft^3. This results in a total volume of 54.1 cubic feet (400 gallons of aqueous solution). This results in approximately 3,350 pounds of aqueous ammonia at 35 percent hydrazine or equivalent to 1,173 pounds of hydrazine within the solution.

Based upon the equation above, the release rate from this spillage would be estimated at 0.0295 pounds per minute. For the purposes of this analysis, this release was evaluated at the center of the facility.

Tote Scenario Results

The results of the analysis for the tote scenario indicate that the impact area is much less than 0.1-mile radius, and the radius is likely to be approximately within 100 feet of the release area with a concentration exceeding the 75 ppm threshold level. This would not result in an offsite exposure in excess of 75 ppm and therefore, is not expected to have a significant impact to the surrounding area.

TECHNICAL AREA : SOIL AND WATER

SUMMARY OF SOIL AND WATER RESOURCES DATA REQUESTS AND RESPONSES

Since filing the Application for Certification, several issues have been the focus of multiple data requests and numerous other data requests have been issued in this subject area. Several issues have been asked and answered in both Soils and Water and in Biological Resources. These pertain to the seawater cooling system currently in operation at ESGS and being used with no significant modification for ESPR. Questions about the intake and outfall structures have been asked. Confirmation that no changes are being made to either portion of the system have been sought. The legal significance of this continuing use and the resultant scope of the impact and compliance inquiry made as part of deciding ESPR have been an important issue.

Other data requests have focused on groundwater, erosion, stormwater management, surface flows, and related topics. All data requests have been answered as of April 30, 2001.

ESP II continues to believe that ESPR, as submitted and accepted by the CEC and as further described during the discovery process, complies with all applicable Laws, Ordinances, Regulations, and Standards, and has no unmitigated significant impacts.

Data Request	Applicant s Response Date	Source of Data Request	Page
112	April 18	CEC	SOIL-3
113	April 18, April 30	CEC	SOIL-4, SOIL-17
114	April 18, April 30	CEC	SOIL-4, SOIL-19
115	April 18, April 30	CEC	SOIL-4, SOIL-19
116	April 18, April 30	CEC	SOIL-5. SOIL-20
117	April 18	CEC	SOIL-5
118	April 18, April 30	CEC	SOIL-6, SOIL-21
119	April 18	CEC	SOIL-6
120	April 18, April 30	CEC	SOIL-9, SOIL-24
121	April 18, April 30	CEC	SOIL-9, SOIL-24
122	April 18, April 30	CEC	SOIL-9, SOIL-24
123	April 18, April 30	CEC	SOIL-10. SOIL-25
124	April 18, April 30	CEC	SOIL-10, SOIL-26
125	April 18	CEC	SOIL-11
126	April 18	CEC	SOIL-11
127	April 18	CEC	SOIL-12
128	April 18	CEC	SOIL-12
129	April 18	CEC	SOIL-12
130	April 18	CEC	SOIL-13
131	April 18	CEC	SOIL-14
CCC-2	April 18	CCC	SOIL-15
CCC-3	April 18	CCC	SOIL-15
CCC-8	April 18	CCC	SOIL-15
CCC-9	April 18	CCC	SOIL-16
CCC-16	April 18	CCC	SOIL-16
CCC-24	April 18	CCC	SOIL-16
135	April 30	CEC	SOIL-26
136	April 30	CEC	SOIL-27
137	April 30	CEC	SOIL-27
138	April 30	CEC	SOIL-28
139	April 30	CEC	SOIL-29
140	April 30	CEC	SOIL-29
141	April 30	CEC	SOIL-29
142	April 30	CEC	SOIL-31
143	April 30	CEC	SOIL-31
144	April 30	CEC	SOIL-32
145	April 30	CEC	SOIL-32

146	April 30	CEC	SOIL-33
147	April 30	CEC	SOIL-34
148	April 30	CEC	SOIL-35
149	April 30	CEC	SOIL-35
150	April 30	CEC	SOIL-36
151	April 30	CEC	SOIL-36
152	April 30	CEC	SOIL-37
153	April 30	CEC	SOIL-38
154	April 30	CEC	SOIL-39
155	April 30	CEC	SOIL-40

TECHNICAL AREA: SOILS AND WATER RESOURCES
AUTHOR: RICH SAPUDAR, TIM LANDIS, JOE CREA, DOMINIQUE BROCARD

BACKGROUND

The cooling water flow rate and temperature rise for the proposed project will remain essentially the same as those of the existing power plant. Therefore, the thermal plume will remain the same as that of the existing plant (when at full load). The AFC states that the ocean surface area with a temperature rise of 1^0F or more is 30 to 40 acres (p.5.5-38), with a more or less circular shape. Further, the AFC states that the temperature rise falls below 4^oF within less than 1,000 ft from the discharge point, thereby complying with the California Thermal Plan. This characterization, however, is based on the assumption that the temperature rise is zero at a point approximately 1,500 ft southwest of the outfall (Thermal Effect Study, 1973, AFC Appendix H, Attachment 6, p. 11), and this assumption is not realistic.

An estimate of the thermal plume size can be made using the type of heat balance analysis mentioned in the Mixing Zone Analysis (AFC, Appendix H, Attachment 14). Assuming a radial temperature distribution of gaussian shape, one finds the 1^oF temperature rise isotherm to have an area of about 3,000 acres, and the 4^oF temperature rise to persist 2,500 to 3,000 ft from the discharge point.

The thermal monitoring data can also be used to develop an estimate of the thermal plume. For example, data are provided from a survey conducted on February 24, 1999 (AFC, p. 5.5-19). Using station RW 4, located about 5,000 ft from the outfall, as background gives a temperature rise of 0.3^oF at station RW 3, located 2,000 ft from the discharge. At the time of the survey, the plant was running at about 7% capacity. Prorating the temperature rise to full capacity gives a temperature rise of 4.5^oF at RW 3, which is consistent with the results presented in the previous paragraph.

APPLICANT S CLARIFICATION OF BACKGROUND

The maximum thermal loading from the ESPR Project will be significantly reduced from the maximum thermal loading from Units 1 and 2. Thermal loading information at maximum capacity is summarized in Table 5.5-3 of the AFC. Projected maximum thermal loading from ESPR (operating at full load) is an estimated 33,298 Million Btu per day. This is compared to actual current thermal loading of Units 1 & 2 of 46,488 Million Btu per day. (Note, the thermal loading units presented in Table are incorrect; the correct units are Million Btu per day).

DATA REQUEST

113. Please provide a realistic characterization of the thermal plume, in terms of temperature rise isotherms over natural temperatures. Because the closest monitoring station is about 2,000 ft from the discharge, and the other stations are even farther away, mathematical modeling, or a reinterpretation of the 1973 thermal survey will be needed.

Response No. 113: The 1973 Thermal report was accepted by the Regional Board as adequate when completed. Also, since the new units will be operated under the existing NPDES permit and, to our knowledge, the Board has not requested a revision of the analysis, we accepted the report as is. We did not review the report for adequacy or accuracy.

In response to the data request, we reviewed the report to determine if it adequately characterized the thermal plumes discharging from the El Segundo Power Plant. The Station Bentho 8 was selected as the background station based on the Regional Board's directives. We reviewed the data collected at the monitoring stations and the plumes shown in the appendices of the report. We concluded that even though Bentho 8 might not be a reliable ambient station because it is too close to the discharge, it did not seem to be more than one degree Fahrenheit over the true ambient temperature, and oftentimes less than one degree over ambient. We based this on comparing Bentho 8 profiles to the other profiles assuming that heat is not fully mixed over the water column and therefore the lower portion of the profile may be indicative of the true ambient temperature. Therefore, we conclude that although the plume size might be underestimated in the 1973 report, it probably provided an adequate characterization of the plume. We do not expect the 1 degF contour to extend much beyond Bentho 8, which was located about 2000 feet from the discharge, and the 4 degF contour would definitely be much smaller in size.

We should note that the Thermal Report does not appear to specify what the flow rate was through the plant during the data collection effort. We have assumed that the plant was operating near capacity and therefore the flow would be similar to what is expected with the new units. If the plant was operating at only half capacity, for example, then the plume sizes reported in the Thermal report would greatly underestimate the plume size that would occur when the plant operated at full capacity. This is an important limitation on the results presented.

114. Please provide a revised estimate of the distance needed for the temperature rise to reach 4°F.

Response No. 114: Although the 4¡ F contour may be underestimated in the 1973 report due to uncertainty in ambient temperature, we believe that the area given in the report to be adequate for the purposes of the AFC. Based on the profiles presented in the report, the 4¡ F above ambient contour would appear to be well inside of Bentho 8.

BACKGROUND

Based on the above, it is questionable whether the existing outfall meets the requirement of the California Thermal Plan.

APPLICANT S CLARIFICATION OF BACKGROUND

The data from the Thermal Effects Study and the mixing zone analysis of the thermal discharges from the ESGS, which was performed using the CORMIX and PLUMES models developed by the USEPA assuming maximum operations of both the ESPR and Units 3 and 4, demonstrate that the existing and proposed discharge meets the requirements of the Thermal Plan.

DATA REQUEST

115. Provide a discussion of alternate outfall configurations, such as multiport diffusers, which would meet the Thermal Plan.

Response No. 115: The discharge structure at the ESGS is a point discharge structure. Heated cooling water exits the discharge piping from the ESGS over 1600 feet from the shoreline. As described in Section 5.6.2.1.4 of the AFC, substantial water is entrained by the thermal discharge before it reaches the surface, thereby significantly reducing the temperature of the discharge at the surface. A mixing zone analysis of the thermal discharges from the ESGS was performed using the CORMIX and PLUMES models developed by the USEPA assuming maximum operations of both the ESPR and Units 3 and 4. The data from the Thermal Effects Study and the thermal modeling demonstrates that the existing and proposed discharges meet the requirements of the Thermal Plan. The current point discharge at the ESGS is still considered BTA, as the system would still be considered for new once-through circulating water systems.

The only possible alternative to the current point discharge would be the use of a multiple port diffuser for discharge of heated cooling water. The multiple port diffuser discharge consists of multiple discharge ports spaced out along the length of the discharge tunnel, with a fraction of the total flow exiting the system through each of the ports. The cumulative flow rate and heat duty input to the ocean would not change from the existing single point discharge.

Installation of the multiple port diffuser for discharge would require a significant amount of disruption to the ocean floor and modification to the existing discharge line. The multiple port discharge diffuser would also place exactly the same flow rate and heat duty into the ocean as the existing single point discharge. Installation of a multiple port discharge diffuser would not improve the temperature differential between the heated discharge water and surrounding water. The current discharge temperature differential would remain at approximately 20¡F with either discharge. Total heat input into the ocean would also not vary using a multiple port discharge diffuser. The single port discharge is presently considered, and will continue to be considered, the BTA for the ESGS and ESPR Project.

BACKGROUND

The statement is made in the AFC that *considerable cold water is entrained by the rising water is evident from the diameter of the surface manifestations and from their temperatures, which may be only 5^{o}F above natural* (pp 5.5-16, 5.6-53). The source is given as the Thermal Effects Study (Benson 1973 - AFC Appendix H, Attachment 2) where the same statement is made. However, it is not clear what the basis for this statement is. At the same time, the Mixing Zone Analysis (AFC Appendix H, Attachment 14) indicates a centerline dilution at the surface of 1.0, i.e. no dilution, and an average dilution of up to 1.7. Thus, according to the Mixing Zone Analysis the temperature rise at the center of the boil would be about 20^{o}F and the average temperature rise in the boil would be 12^{o}F.

DATA REQUEST

116. Please provide basis for statement that *considerable cold water is entrained by the rising water that is evident from the diameter of the surface manifestations and from their temperatures, which may be only 5^{o}F above natural ,* or provide corrected information on temperature rises in the area where the thermal plume impinges on the water surface.

Response No. 116: The issue raised by this data request is under consideration; additional information will be forthcoming on or before May 4.

BACKGROUND

The AFC states that *although the intake structure will be for an existing facility, it appears that the existing intake structure meets the proposed requirements to reduce impingement of aquatic organisms for a new facility* (AFC, p. 4.5-34). However, one of the requirements of the proposed EPA rule on cooling water intake structures is that the intake velocity should be less than 0.5 ft/s. This velocity is exceeded by the current intake.

APPLICANT S CLARIFICATION OF BACKGROUND

Although the proposed rule for new intake structures would require a maximum design intake velocity at each cooling water intake at a facility be no more than 0.5 ft/s, USEPA is soliciting comment on this requirement. USEPA is also considering comment on a less stringent requirement and on allowing site-specific determinations for new intake structures. The key measure regarding velocity is the effectiveness of the velocity cap.

DATA REQUEST

118. Please provide an assessment of alternative cooling water intake designs that would meet the proposed EPA rule.

Response No. 118: The data demonstrates that the velocity cap is extremely effective in reducing impingement of aquatic organisms. Entrainment and impingement impacts associated with the existing facility and the ESPR Project are not significant and do not warrant further mitigation. The effectiveness of the velocity cap in reducing impingement is discussed in Section 5.6 of the AFC.

The following discussion was provided in response to Data Request 81, and is provided here for further reference.

Cooling System Intake. Impingement consists of holding marine resources by pressure differential across screen grids that protect the cooling water system from entraining marine resources. The El Segundo Generating Station (ESGS) currently utilizes a velocity cap

intake system to reduce entrainment. Ongoing compliance monitoring demonstrates that the velocity cap is very effective in preventing entrainment resulting in impingement at the ESGS. Impingement prior to installation of the velocity cap was 272.2 tons of fish per year at Units 1 and 2. This was reduced to 14.95 tons immediately after installation of the velocity cap in the mid-1950s.

Impingement monitoring at Units 1 and 2 during 1999 indicates that 0.045 tons (about 90.2 pounds) of fish were impinged. Most of the fish were impinged during heat treatment and originated from populations living in the intake forebay. Details regarding the biological consequences of cooling water supply at the ESGS can be found in Section 5.6.2.1.3 of the AFC.

The velocity cap intake system used at the ESGS would be considered for implementation today on a coastal once-through power generation facility. Alternatives to the velocity cap include the Gunderboom Marine Life Exclusion System (MLES^{TM}). The MLES is an engineered system of screens that encloses an intake structure on a once-through facility. Since the screen area is large, water velocities across the screen are small, and the pressure difference that would induce impingement of marine life is small. However, the feasibility of applying this technology on a project of this magnitude in a coastal intake is improbable.

Previous installations of the MLES have been for flow rates that are significantly less than for the ESGS once-through cooling system. The intake is located away from the shoreline and underground tunnels feed water from the ocean. Installation of the MLES is typically along a shoreline or river bank directly surrounding an intake structure. The placement of the ESGS intake away from the shoreline makes the installation of the MLES logistically difficult, if not impossible.

Another technology to reduce impingement is the wedgewire screen. The wedgewire screen operates in a manner similar to the velocity cap, but differs from the velocity cap in that the velocities across the screen are much more uniform than a conventional passive screen. The uniform velocities across the screen would serve to limit the impingement of marine resources when compared to the velocity cap.

Wedgewire screens are not designed for flow rates as high as required for the ESGS once-through cooling system. For a proper installation, multiple screens would need to be installed at the ocean water intake. The use of wedgewire screens would also require a means for clearing

the screens to maintain an acceptable intake velocity. This is generally accomplished with an air purge, which essentially dislodges any marine growth and debris that accumulates on the wedgewire screens by backflowing air through the screens. Maintenance of an air purge system would be impossible given the location of the intake in the ocean. Therefore this technology is not feasible for this application.

ESGS s use of a velocity cap can be expected to perform well when compared to the MLES and wedgewire screens. Marine resource impingement at the El Segundo site is currently extremely low, and the incorporation of the MLES or wedgewire screens into the cooling water intake system would not be expected to reduce the impingement rate from its current rate. In addition, installation would require disruption of the ocean floor and modification to the existing discharge line.

Impingement results during normal operations are so low and infrequent, that a statistical analysis to compare differences of alternative technology would be based on a data set with a mean impingement number for most species ranging from 0 to <1, and very high variance. As a result, it would be very unlikely that any type of analysis, such as a Student T test or ANOVA would result in a significant difference between technologies that provided additional benefits. Furthermore, when mean numbers of individuals per species impinged is generally less then 1, and in most cases 0, any incremental improvement would not justify the costs or disruptions to the ocean floor or modification of the existing discharge line associated with the installation of the new technology.

To further address fish impingement, the ESPR Project proposes to initiate a pilot project to investigate the feasibility for a fish removal method prior to heat treatment. This pilot project is described under Applicant s proposed Mitigation Measure BIO-11, in Section 5.6.4 of the AFC. The method to be evaluated in this pilot project will be the deployment of a modified beach seine net in an attempt to scoop fish out of the forebay and return them to the ocean. Evaluation of the success of this program will be based on comparisons from present and historical fish and invertebrate impingement data during heat treatments. If a significant decrease in impingement can be quantified, the method and technique will be incorporated in the appropriate heat treatment protocols.

BACKGROUND

To evaluate the affected environment and potential impacts from storm water runoff, it is necessary to identify run on and run off quantities and quality of the ESPR site and associated facilities. The ESPR site is mostly contained in the current ESGS site, which would represent the current runoff conditions. It is difficult to identify any potential ESPR impacts from stormwater runoff due to the mix of existing and planned runoff discussions in the AFC. In order to evaluate the impacts related to stormwater and erosion/sedimentation, Staff has requested a draft Stormwater Pollution Prevention Plan (SWPPP) for previous power plant projects. Stormwater and erosion/sediment control plans are components of the SWPPP. These plans are crucial to evaluate impacts related to ESPR stormwater quantity and quality. A separate draft demolition and construction plan is also needed as part of the SWPPP.

DATA REQUEST

120. Please provide the pre- and post-discharge for the 100-year frequency and 24-hour duration runoff event. Provide supporting data regarding the routing of off- and on-site runoff during these runoff events.

Response No. 120: Please refer to response to Data Request 142, which requests similar information but modifies the scope of the request. The response to Data Request 142 addresses Data Request 120 as well.

121. Please provide the location of Discharge structure No. 002 on the mapping so Staff can evaluate the entire existing and proposed drainage routes for discharge capacity.

Response No. 121: A figure with this information was provided as Attachment 19, in the Data Response package docketed April 20.

The wastes discharged through this outfall are described in Figure 5.5-2. Outfall No. 002 will not be modified as an element of the ESPR Project. However, Outfall No. 002 will continue to receive waste flows from the ESPR Project in the same manner as described in Figure 5.5-2, with the exception of sanitary wastewater, which will be discharged to the sanitary sewer operated by the City of Manhattan Beach.

122. Provide a draft stormwater and an erosion/sediment control plan for the facility and associated linear facilities that includes the following:
    - Map drawings of 1 =100 or less that depict existing and proposed topography (contours) with labeled elevation numbers, structures, facilities, staging areas, and soil stockpile areas on the drawings (both on site and off site)
    - Best Management Practices and a construction sequence on the drawings
    - A complete mapping symbols legend on the drawings
    - On site stormwater calculations in the narrative
    - Address procedures that used to handle potential construction runoff impacts.
    - Maintenance and monitoring protocol for erosion, stormwater runoff control and stabilization procedures.

Response No. 122: Please refer to response to Data Request 144, which requests similar information but modifies the scope of the request. The response to Data Request 122 is provided in response to Data Request 144.

BACKGROUND

The AFC water resource section discussions rely heavily on the current and future requirements of the NPDES and associated permits. In order to assess how the potential water resource impacts are going to be mitigated, please furnish data and analysis to show how these conceptual permit conditions will be addressed. For example, on page 5.5-2 there is a bullet that is one of a list of additional key characteristics that the ESPR team has developed which states "*Extensive pre-submittal consultation with the following agencies or city entities."* One of the key regulatory agencies will be the Los Angeles RWQCB.

DATA REQUEST

123. Provide a draft hazardous materials storage and disposal plan that includes spill prevention and containment measures. Provide draft work plan needs that addresses the handling and disposal of contaminated sediments/groundwater.

Response No. 123: Please refer to response to Data Request 145, which requests similar information. The response to Data Request 123 is provided in response to Data Request 145.

BACKGROUND

The AFC mentions that major cut and fill operations are not anticipated. Staff has requested conceptual volumes of cut and fill for previous power plants. The volume of cut versus fill will allow Staff to analyze grading impacts and to determine impacts related to the handling and/or disposal of excess fill.

DATA REQUEST

124. Please provide a conceptual volume of cut versus fill for grading and as excess spoil material.

Response No. 124: Please refer to response to Data Request 146, which requests similar information. The response to Data Request 124 is provided in response to Data Request 146.

BACKGROUND

The AFC does not discuss some of the areas that will be used for construction and/or operation of the ESPR. These include the tank and other staging/laydown areas; new pipeline corridors and roads or other existing transportation facilities. From the Workshop March 28, 2001, these areas have now been made part of the project. These additions will require discussion and figures that were not in the original and subsequent data requests.

DATA REQUEST

135. Provide figures that clearly show the existing and ESPR elements including the temporary laydown, roads and other lineal corridors to be used during demolition and construction. These figures should be to the same scale as the AFC drawings and clearly show the pre and post site and associated facility conditions.

Response No. 135: These areas are shown on figures included in the draft SWPPP (refer to Data Request 144). However, except for the area designated Power Plant Site on Figure 3.2-1, the pre and post site conditions for all areas will not change. Differences in the pre and post site conditions for the Power Plant Site are discussed in the responses to Data Requests 136 and 142.

Site	Figure in Draft SWPPP

Kramer	8
FedEx	9
LAX Pershing	10
Marina del Rey Boat Launch	4
Dockweiler Beach State Park	5
Hyperion	6
Grand Avenue	7
Chevron Marine Terminal	11
Potable and Reclaim Water Pipelines	3A
Sanitary Sewer and Aqueous Ammonia Pipelines	3B

136. Provide pre and post drainage calculations, clearly showing contours, capacities, direction of flow and other runoff information to allow for an assessment of the existing and ESPR runoff conditions.

Response No. 136: Contours, spot elevations and flow directions are shown on AFC Figures 3.5-1 and 3.5-2, Site — Grading & Drainage Plans. Total area, percent impervious, slopes, and surface runoff characteristics are unchanged between the existing Units 1 & 2 and the proposed Units 5, 6, & 7 drainage areas. Consequently, there will be no change in the storm water flow to Outfall No. 001.

For Outfall No. 002, there will be an increase in storm water flow because precipitation falling on the area of the fuel oil secondary containment basins will be connected by a proposed storm drain line. Previously, this area had no outlet and rain falling into it either evaporated or was pumped out and disposed of in accordance with applicable regulations. The additional tributary area of the proposed staging area (former containment basins) and west slope is approximately 5.1 acres. The rainfall intensity for a 50-year event with an assumed 7-minute duration storm for this area is 3.77 inches per hour. Considering the percent impervious of this entire area as approximately 90%, the resulting developed runoff coefficient would be 0.86; yielding a peak flow of approximately 16.5 cubic feet per second using the Rational Method. A 30-inch HDPE pipe at a slope of 0.005 ft/ft will carry almost 38 cfs; more than double the calculated peak flow for a 50-year event. In any case, the additional peak flow is insignificant compared to the capacity of the discharge structure which handles a cooling water flow of approximately 615 cfs (398 mgd). The existing discharge structure can easily handle the additional peak storm water flow.

137. Provide road and other lineal facilities (pipelines etc) figures, showing construction and ESPR conditions.

Response No. 137: Please refer to response to Data Request 135.

BACKGROUND

It is not clear in the AFC whether the retention basin will be used for construction and/or ESPR operations. The local county flood control and regional board currently require retention of storm runoff from construction and operation site facilities. These will require either a temporary and/or permanent retention basin for stormwater runoff.

APPLICANT S CLARIFICATION OF BACKGROUND

No storm water runoff from the ESGS is discharged to a municipal separate storm sewer system, hence storm water discharges from this facility will not be regulated by the Los Angeles County Flood Control District. The Los Angeles Countywide Storm Water Management Plan does not require retention of storm runoff from construction sites during the construction phase. Storm runoff from the ESGS site is discharged through oil/water separators prior to discharge to Outfall Nos. 001 and 002 under the requirements of the NPDES permit. Storm water is not discharged to the retention basin. During construction, storm water from the ESGS will continue to be treated and discharged in this manner in compliance with the requirements of the NPDES permit.

DATA REQUEST

138. Provide a characterization of the process and stormwater flows that will be retained onsite for a period of time as required.

Response No. 138: No changes to the existing low volume waste streams discharged to the retention basin are projected as a result of implementation of the ESPR Project. This is discussed in section 5.5.2.1.4 of the AFC. The existing/expected retention basin effluent quality is characterized in Table 5.5-22 of the AFC. As noted in the clarification above, retention of storm water is not required. Erosion and sediment control and other BMPs as appropriate will be identified in the Construction Storm Water Pollution Prevention Plan (SWPPP) and implemented during demolition and construction. A draft SWPPP has been prepared for inclusion in this Data Request Response (refer to Attachment 23 and response to Data Request 144). The entire ESGS site drains into oil water separators. The oil water separator(s) for the ESPR Project site

will continue to discharge into Outfall No. 001. Storm water will not be discharged to the retention basin. Storm water management during demolition and construction is discussed in more detail in section 5.5.2.1.1 of the AFC.

139. Show these flows on a schematic for construction and operation conditions.

Response No. 139: A schematic for these flows during operation of the ESPR Project is presented in Figure 3.4-5. The entire ESGS site drains into oil water separators. The oil water separator(s) for the ESPR Project site will continue to discharge into Outfall No. 001 as described on Figure 3.4-5.

140. Provide a figure of the current retention basin, including the broad crested weir, overflow basin and inflows and outflows for both existing and future conditions for both of these basins.

Response No. 140: Engineering design drawings of the current retention basin have been provided to CEC as reference documents. Additional discussion of the existing and future conditions of the retention basin is provided in the Draft Stormwater Pollution Prevention Plan (SWPPP), as discussed in response to Data Request 144.

BACKGROUND

The AFC discusses several environmental site assessments that were performed for the current project and purchase of the SCE tank property. There is known water and soil contamination from several potential sources described in all of these reports. This contamination is both at the surface and extends to approximately 20-ft depths depending on the location.

DATA REQUEST

141. Provide a current Phase I and II Environmental Site Assessment (ESA) for both the construction and operation areas of the ESPR. These should include:

- Assessment work plans for Phase II ESAs
- Any discussions and requirements from the RWQCB
- Results of testing
- Updates as progress on these assessments are completed

Response No. 141: A Phase I ESA was completed for the ESGS in December 2000. The Phase I discussed site conditions for the whole plant, including the work site and the adjacent tank farm area.

The most recent Phase II was completed in 1998 for the ESGS. This Phase II was conducted by NRG/Dynegy as part of their Buyer s Due Diligence prior to their purchase of the plant site from Southern California Edison (SCE). This Phase II addressed areas of concern and potential concern that had been previously assessed by SCE and Chevron. Excerpts from NRG/Dynegy s 1998 Phase II were included in the AFC; a copy of this document may be provided upon request. This Phase II is considered current. When considering the results of this Phase II and the historical data that were evaluated as part of the Phase II, this document is also considered sufficient to address subsurface soil and groundwater conditions at the site. No known events have occurred on site that would warrant additional Phase I or Phase II ESAs at the site.

Quarterly groundwater monitoring, sampling, and reporting are conducted at the ESGS and neighboring sites in accordance with the Los Angeles Regional Water Quality Control Board s Consent Agreement Order with Chevron El Segundo. Results of previous sampling were discussed in our Phase I and II ESA. A copy of Radian International s 1999 Annual Report of groundwater monitoring and sampling results was provided as reference document. A copy of their 2000 Annual Report of groundwater monitoring and sampling results will be provided as a reference document.

Further Phase I or Phase II ESAs are not recommended in connection with the ESPR. Therefore, Phase II ESA work plans will not be prepared. Any further subsurface studies would be focused on construction dewatering planning. Specifically, we will be performing a pump test to evaluate probable groundwater pumping rates and water quality criteria for groundwater treatment design purposes. Reports of these tests will be provided.

BACKGROUND

Because the ESPR project will entail total earthmoving greater than 5 acres, a National Pollution Discharge Elimination System (NPDES) permit for Stormwater Runoff from Construction Activities is required. The Los Angeles Regional Water Quality Control Board (LARWQCB) has indicated that all areas involving earthwork associated with the ESPR project will be included in one NPDES permit. To evaluate

the affected environment and potential impacts from stormwater runoff, it is necessary to identify run on/runoff quantities and quality of the ESPR site and areas associated with the project (laydown/staging areas, parking area, linear facilities, and tank demolition south of the proposed power plant). In order to evaluate/analyze the impacts related to stormwater and erosion/sedimentation, Staff has requested a draft Stormwater Pollution Prevention Plan (SWPPP) for previous power plant projects. Stormwater and erosion/sediment control plans are components of the SWPPP. These plans are crucial to evaluate impacts related to ESPR stormwater quantity and quality.

DATA REQUEST

142. Provide the pre- and post-discharge for the 100-year frequency and 24-hour duration runoff event. Provide supporting data regarding the routing of off- and on-site runoff during these runoff events.

Response No. 142: The pre-development peak discharge associated with a 100-year, 24-hour runoff event for Outfall No. 001 is 24.8 cubic feet per second. As indicated in the response to Data Request 136, the post-development flow will be the same. All surface runoff from areas tributary to the project site are captured by the site drainage system. Run-on to the work area will be from the vegetated slope east of the power block. The 100-year, 24-hour peak flow corresponding to this area is 4.6 cfs. Part of this run-on flow will be pumped to the Outfall No. 002 storm water drainage system while the power block excavation is open. Since it is not feasible to provide pumping for extraordinary events, flows in excess of the pump capacity will flow into the excavation where it will percolate into the excavation floor and/or be pumped out and treated as part of the deep excavation dewatering operation.

Following closure of the excavation, all flows will be routed through the new storm drainage system. Runoff in excess of the system capacity will surcharge the inlets until the peak flow volume has been passed through the system.

143. Provide the location of Discharge structure No. 002 on the mapping so Staff can evaluate the entire existing and proposed drainage routes for discharge capacity.

Response No. 143: This information is provided on revised Figure 3.5-1A, which was provided in response to Data Request 121 (refer to Attachment 19), submitted on April 20, 2001. The wastes discharged through this

outfall are described in Figure 5.5-2. Outfall No. 002 will not be modified as an element of the ESPR Project. However, Outfall No. 002 will continue to receive waste flows from the ESPR Project in the same manner as described in Figure 5.5-2, with the exception of sanitary wastewater, which will be discharged to the sanitary sewer operated by the City of Manhattan Beach

144. Provide a draft stormwater and an erosion/sediment control plan for the facility and associated linear facilities that includes the following:

- Map drawings of 1 =100 or less that depict existing and proposed topography (contours) with labeled elevation numbers, structures, facilities, staging areas, and soil stockpile areas on the drawings (both on site and off site)
- Best Management Practices and a construction sequence on the drawings
- A complete mapping symbols legend on the drawings
- On site stormwater calculations in the narrative
- Address procedures that were used to handle potential construction runoff impacts.
- Maintenance and monitoring protocol for erosion, stormwater runoff control and stabilization procedures.

Response No. 144: A Draft SWPPP for Storm Water Discharges Associated with Construction Activity is provided as Attachment 23.

145. Provide a hazardous materials storage and disposal plan that includes spill prevention and containment measures associated with all onsite and offsite project activities. Provide a draft work plan that addresses the handling and disposal of contaminated soils/groundwater, and that identifies all agencies and permits regulating contaminated groundwater resulting from demolition/construction operations, including dewatering and treatment operations, and the discharge and/or disposal of this water.

Response No. 145: A draft Waste Management Plan (WMP) that addresses the above issues for on site activities is provided in the AFC, Appendix S.

Regarding offsite activities, we do not anticipate encountering contamination. However, the draft WMP provides general procedures for handling and disposal in the event that contamination is encountered offsite.

The WMP identifies permits needed (i.e., General NPDES Permit for Construction Dewatering projects) for handling impacted groundwater, and the lead regulatory agency for reporting groundwater management

during the project. The WMP also lists available disposal facilities for handling impacted soil or construction/demolition debris, including regulated building materials, during the project.

BACKGROUND

The AFC mentions that major cut and fill operations are not anticipated. Staff has requested conceptual volumes of cut and fill for previous power plants. The volume of cut versus fill for all construction activities associated with the ESPR project will allow Staff to analyze grading impacts and to determine impacts related to the handling and/or disposal of excess fill.

DATA REQUEST

146. Provide a conceptual volume of cut and fills for grading and as excess spoil material. Include all construction areas and pipeline trenches.

Response No. 146: Conceptual volumes of cut, fill, and excess material for the power plant site and pipeline trenches are provided below:

Power block:
excavation: ..... 43,000 cy
backfill: ..... 33,000 cy
excess: ..... 10,000 cy

Fuel tank staging area:
excavation (contaminated): ..... 10,000 cy
excavation (west berm) ..... 6,000 cy
fill (power block & water pipeline excess & west berm): 18,000 cy

Water pipelines:
trench excavation: ..... 5,500 cy
pipe bedding and imported fill: ..... 1,500 cy
trench backfill: ..... 3,500 cy
excess: ..... 2,000 cy

Sanitary sewer:
trench excavation: . 50 cy
pipe bedding and imported fill: 10 cy
trench backfill: . 35 cy
excess: . 15 cy

BACKGROUND

The AFC water resource section discussions rely heavily on the current and future requirements of the NPDES and associated permits. In order to assess how the potential water resource impacts are going to be mitigated, furnish data and analysis to show how these conceptual construction and operation permit conditions will be addressed. For example, on page 5.5-2 there is a bullet that is one of a list of additional key characteristics that the ESPR team has developed which states "*Extensive pre-submittal consultation with the following agencies or city entities."* One of the key regulatory agencies will be the Los Angeles RWQCB.

DATA REQUEST

147. List any local RWQCB water resource construction and operation concerns that were the result of these pre-submittal consultations and how they will be met by the project.

Response No. 147: RWQCB staff did not express concerns regarding construction activities during the informal pre-submittal consultations. No concerns were expressed regarding the construction of the ESPR project. Concerns expressed were related to potential increases in annual volumes of water circulated and Btu loading resulting from increased utilization of the once-through cooling system by the ESPR Project. Project staff noted that, as the once-through circulating system would not be modified, the maximum daily volume of water circulated would not be increased. In addition, the ESPR project would be designed to conform to the thermal discharge limitations specified in the ESGS NPDES permit. These concerns are addressed in more detail in Sections 5.5 and 5.6 of the AFC and rely on capacity utilization data from 1999 (see Table 5.5-3). However, Units 1 and 2 are now being utilized at full capacity and are projected to continue to be utilized at full capacity for the foreseeable future. Hence, the volume of once-through cooling water circulated will not increase over current conditions.

BACKGROUND

The AFC discusses the 303(d) status of Santa Monica Bay, and presents a list of pollutants/stressors for which the bay exceeds water quality standards (AFC Table 5.5-5). AFC Table 5.5-7 provides a list of constituents for which the project has effluent limits which the project s discharge must meet

AFC Table 5.5-22 presents a list of waste streams and the estimated concentrations of selected constituents. This table is incomplete, and does not list all relevant in-plant process waste streams, nor does it include estimated concentrations for the 303(d) constituents listed on Table 5.5-5 based on expected source water concentrations.
AFC Figure 5.5-2 presents a water flow schematic for Units 1, 2, 3, and 4. The diagram is incomplete, as it does not include the flows/water balance for Units 5, 6, and 7.

DATA REQUEST

148. Revise Table 5.5-22 to include all significant in-plant waste steams and volumes, e.g., boiler blowdown, wash wastes, inlet cooling blowdown, reverse osmosis/demineralizer reject wastewater, softener regenerate waste, HRSG blowdown, steam turbine blowdown, equipment drains, etc.

Response No. 148: The NPES Permit specifies effluent limitations for three discharges at the ESGS:

- Sanitary effluent;
- Retention basin effluent;
- Circulating water discharge

No modifications to the existing treatment and disposal of low-volume in-plant wastes are expected with the implementation of the ESPR Project. It is expected that the volume and quality of the low volume wastes will not change significantly from existing conditions and the effluent quality will continue to meet limitations established in the NPDES permit. All in-plant (low volume) waste streams will continue to be commingled in the retention basin. Therefore, the column of Table 5.5-22 entitled Existing Retention Basin Effluent characterizes the expected quality of the commingled treated wastes discharged to Outfall No. 001. Sanitary wastes will be discharged to the sanitary sewer system operated by the City of Manhattan Beach. As treated sanitary wastes will no longer be discharged to Outfall No. 001, the third column, entitled Combined Waste to Outfall 001 should be deleted. Effluent limitations protective of the beneficial uses of the receiving waters were established in the NPDES permit by the Regional Water Quality Control Board.

149. Revise Table 5.5-22 to include all elements listed on Table 5.5-5. These estimates should be based on the concentrations of constituents (elements) contained in the source water(s), i.e., reclaimed, potable, etc., determined using

an analytical method with detection limits comparable to USEPA Method 200.8 (Inductively Coupled Plasma-Mass Spectroscopy).

Response No. 149: Table 5.5-22 identifies the constituents expected to be present in the circulating water discharge and retention basin effluent and which are regulated under the effluent limitations of the NPDES permit. The pollutants listed in Table 5.5-5 that are not included in Table 5.5-22 are not expected to be found in significant quantities in the existing discharge nor would they be expected in the discharge from the ESPR Project. The only change in source water will be the use of reclaimed water treated by reverse osmosis. As reflected in Table 5.5-2, concentrations of metals, dissolved solids and other constituents in the reclaimed water treated by reverse osmosis are significantly lower than found in the existing potable source water. Further, no sources of the organic contaminants included in Table 5.5-5 will be associated with the proposed source waters or added in the operation of the ESPR Project.

150. Revise Figure 5.52 to provide flows/water balance for Units 5, 6, and 7.

Response No. 150: This information is presented in Section 3.4 of the AFC, Figures 3.4-5 and 3.4-6.

BACKGROUND

The impingement and entrainment of aquatic life related to the operation of the existing once-through cooling system has been raised as an issue. The status of the project s NPDES permit with regard 316(a) and (b) requirements requires resolution as quickly as possible. This aspect of the project will be particularly important should any additional data and/or studies be required to determine impacts or mitigation for significant impacts.

DATA REQUEST

151. Provide a letter summarizing consultations with the LARWQCB and the USEPA Region 9 regarding the 316(b) aspects of the intake structure. The consultation should include evaluation under the existing 316(b) guidelines and the upcoming 316(b) rules for existing electrical generators.

Response No. 151: No consultations were held with the LARWQCB or USEPA Region 9 regarding the 316(b) aspects of the intake structure. In adopting the revised NPDES Permit for the ESGS on June 29, 2000, the

LARWQCB made a finding that the 316(b) studies completed in 1982 addressed the important ecological impacts of the intake system and demonstrated that the ecological impacts of the intake system were of an environmentally acceptable order, and provided sufficient evidence that no modification for the location, design, construction or capacity of the existing system was required. The finding adds that the design, construction and operation of the intake structure was then considered Best Available Technology Economically Achievable (BAT) as required by Section 316(b) of the Clean Water Act (CWA).

A copy of the NPDES permit is included as attachment 10 to Appendix H to the AFC. No modifications to the existing once-through cooling system are proposed and no federal requirements currently exist for the design of new or existing intake structures. However, the proposed rules for cooling water intake structures for *new* facilities issued by the USEPA on August 10, 2000 were reviewed. In these regulations, USEPA identified a number of intake technologies available for installation at cooling water intake structures to minimize adverse environmental impact. Velocity caps were identified as a Diversion or Avoidance System.

Although the proposed rule for new intake structures would require a maximum design intake velocity at each cooling water intake at a facility be no more than 0.5 ft/s, USEPA is soliciting comment on this requirement. USEPA is also considering comment on a less stringent requirement and on allowing site-specific determinations for new intake structures. USEPA was contacted to discuss the applicability of the proposed regulations to the ESPR Project.[1] As no modification to the intake structure will be made, the ESPR cooling water intake would be classified as an existing intake structure. Proposed regulations for existing structures are not scheduled for publication until July 2001.

152. Provide a copy of the letter from to LARWQCB responding to the letter dated December 13, 2000 to Deborah J. Smith of the LARWQCB from David Loyd of El Segundo Power II LLC (AFC Appendix H, Attachment H-9) requesting determination of existing discharge under the California Thermal Plan.

Response No. 152: A response to this letter has not been received as of this writing. David Hung, Senior Water Resource Control Engineer reported that a response has been drafted and is currently under review. It is

[1]Robert Collacott, URS Corporation, personal communication with James T. Morgan, USEPA Headquarters, August, 2000.

anticipated that the response will be received in the next several days. This response will be forwarded to the CEC on receipt.

BACKGROUND

The reclaim water for the ESPR project will be supplied via the West Basin Municipal Water District. This water will be used as makeup to the steam cycle, closed-loop auxiliary cooling system, and for steam injection to the combustion turbines. The new 10-inch diameter pipeline will tie-in to an existing 12-inch diameter pipeline that is located near the intersection of Richmond Street and El Segundo Boulevard. The new pipeline route will begin at the ESPR site, follow Vista Del Mar to Grand Avenue, and then follow El Segundo Boulevard to its terminus with the existing pipeline near Richmond Street and El Segundo Boulevard. According to the West Los Angeles Bureau of Engineering, the Department of Water and Power has existing reclaimed water lines that are located in the Grand Avenue right-of-way near the Hyperion Sewage Treatment Plant, which is north of the proposed ESPR project.

According to Paul Garry, who is with the City of El Segundo Department of Community, Economic and Development, Planning Division, the City of El Segundo has concerns regarding the proposed reclaim and potable water supply pipelines. On Friday, April 20, 2001, the Planning Division met with members from the West Basin Municipal Water District and was informed on existing water supply issues. Aside from the Applicant s proposed tie-in to ultra-pure water, another reclaimed water line exists at the Department of Water and Power (DWP) location. The ESGS site currently receives water from this location via an existing pipe.

The City has indicated that the proposed route through El Segundo Avenue would be difficult to construct and maintain due to existing underground utility congestion. The City of El Segundo also indicated that Standard, Main and Richmond Streets should be avoided by pipeline construction due to present constraints. The City of El Segundo requests that the Applicant assess alternative locations for reclaimed and potable waterline routes to avoid excavation impacts to historical and biological resources around the streets of Richmond and El Segundo, respectively.

DATA REQUEST

153. Provide an analysis for the proposed reclaimed and potable water pipeline routes and connections versus alternative routes. The analysis should analyze pipeline efficiency and cost for modifications (pipeline and treatment) to the existing reclaimed water line as well as other routes/connections where street

excavation would be minimized and the aforementioned street corridors would not be impacted.

Response No. 153: The City of El Segundo comments regarding pipeline paths, forwarded via this Soil and Water data request, coupled with the CEC Cultural Resource comments, indicate that the Grand Avenue to Eucalyptus to El Segundo Blvd path is the one path through the alternate pipeline study area that has no objections. As such, the Applicant suggests that the CEC permit the project for that path and that path only. The intent of this alternate pipeline study area was to allow this type of flexibility in the path of the water supply pipelines. The entire alternate pipeline study area was included in the AFC with full impact consideration, thus any route within that path can be chosen with no need for additional information. The study area itself represents the area where the pipeline could progress from its starting point to the Grand Avenue/ Whiting Street intersection where it continues west to Vista Del Mar. The study area represents the lowest impact region where the pipeline would have equivalent length regardless of the actual route chosen within the study area.

BACKGROUND

Table 3.9-5 under Facility Description and Location provides estimated land disturbance for the proposed project within the existing ESPR at 14.1 acres. The Agriculture and Soils section of the AFC addresses the land disturbance impacts under section 5.4.2.2 Power Plant Site . This section identifies total land disturbance within the existing ESGS site to be 14.1 acres. The Water Resources section of the AFC addresses proposed land disturbance under section 5.5.2.1 Demolition and Construction . This section identifies approximately 6 acres within the existing ESGS site to be disturbed during demolition and construction.

DATA REQUEST

154. Please explain why proposed land disturbance within the existing ESGS site differ in the Water Resources section as opposed to the Agriculture and Soil and Facility Description and Location sections.

Response No. 154: The area of estimated total land disturbance in the area of the new units is 14.1 acres. The 6-acre figure referenced in the Water Resources section accounts for the area immediately surrounding the new power blocks. The 14.1-acre figure refers to a larger area

encompassing the power block construction area as well as other activities such as relocation of existing tanks and buildings in the northern portion of the ESGS site.

BACKGROUND

The Applicant has provided physical descriptions and limitations for the Oceano soil association within the Agriculture and Soils section of the AFC. All project components with the exception of two worker parking and staging areas will occur on the Oceano soil type. The worker parking and staging areas occur on the Ramona-Placentia and Cropley Associations, respectively.

DATA REQUEST

155. Provide physical descriptions and limitations for the Ramona-Placentia and Cropley Associations.

Response No. 155: The following physical descriptions are provided for the above-referenced soil types.

Ramona-Placentia. The Ramona-Placentia association soils are typically at slopes of 2 to 5 percent, with very slow runoff. They are moderately well drained and have very slow subsoil permeability. The erosion hazard is slight.

The Ramona-Placentia mapping unit is characterized by its fine-textured loam content and has a Land Capability Classification of IIe-1 2/IVe-3. The unit has severe agricultural limitations and requires careful cultivation management. The choice of plants for the unit is restricted. The primary problem with the soil association is high shrink-swell behavior. Ramona-Placentia soils have moderate inherent fertility and are currently used almost exclusively for residential and industrial purposes in the project area.

Cropley. The Cropley association soils typically occur on nearly level alluvial plains and valley floors, are well drained, and have slow sub-soil permeability due to clay surface layers and clay subsoil. Surface runoff is very slow. The erosion hazard is slight. These soils have high shrink-swell potential: hard and cracked when dry and very sticky when wet.

The Cropley mapping unit has a Land Capability Classification of IIs-5. The unit has some agricultural limitations and requires moderate conservation practices. The choice of plants for the unit is restricted. The primary problem with this soils association is the shrink-swell potential. Cropley soils have high inherent fertility and are currently used almost exclusively for residential and industrial purposes in the project area.